

2020 國研盃智慧機械競賽

(ASME Taiwan SPDC) 簡章



壹、前言：

美國機械工程師學會 (ASME) 成立於 1880 年，學會為一非營利事業組織，致力於促進工程科學界的技术合作、知識共享以及技能發展，並提升工程師在學會中的重要性。學生競賽 (Student Design Competition, SDC) 共分成兩個層級，分別為區域賽和總決賽，優勝者可以代表參加下一層級的比賽，本次 ASME SPDC 競賽屬於台灣分會自行依比賽規則舉辦的榮譽賽，成績優勝隊伍可獲得獎金並參加美國 ASME 區域賽。若在區域賽競賽中再次獲得佳績，則可受邀參加 IMECE 會議中的全球總決賽 (International Mechanical Engineering Congress & Exposition)，與來自全球各區的優勝隊伍一較高下。

貳、競賽宗旨：

1. 提供培養專業機械工程師、領導人的技術平台。
2. 創造國際間工程技術分享與交流。
3. 提供參賽學生認識美國機械工程師學會的機會。

參、辦理單位：

主辦單位：美國機械工程師學會 台灣分會

國家實驗研究院儀器科技研究中心



承辦單位：美國機械工程師學會 臺灣大學學生分會

美國機械工程師學會 清華大學學生分會

美國機械工程師學會 交通大學學生分會

美國機械工程師學會 中山大學學生分會

肆、競賽時間與地點：

時間：2020 年 3 月 7 日(星期六) (詳細時程安排會公布於 FB 粉絲專頁上)

地點：竹北生醫園區

(如遇不可抗拒之因素，主辦單位得更改競賽時間與地點)

主辦單位提供參賽者午餐，請於報名時一併填寫欲訂購的份數。

注意：我們將於 2/22 (六) 當天開放設計競賽隊伍可以到現場進行測試及調整，詳細開放時間會再另外公布。

伍、競賽項目：

國內賽包含二種項目：

1. Student Design Competition 學生設計競賽：

2020 年 SPDC 設計競賽題目為 **Building to the Sky** 請依照題目設計出作品進行參賽。詳細規則請參照附錄一或 ASME 官方網站 (第 1 條不適用於本榮譽賽)。

注意：依 ASME 過去數年慣例，競賽規則會隨參賽者反應而時有修訂，請參賽隊伍主動注意總部規則修正，並請隨時密切注意 ASME 官方的 Q&A，Q&A 之問答亦屬於比賽之規則，相關資訊可由此獲得：
<https://www.asme.org/events/competitions/student-design-competition>

2. Old Guard Oral Presentation Competition 演講競賽：

演講題目不限，機械相關即可，全程以英文演講和問答。詳細資訊請參照附錄二或 ASME 官方網站。比賽評審重點在大學生個人對機械相關議題的分析與分享能力或是個人在學期間研究成果的發表，並不是英文能力的鑑定。

陸、參賽資格：

國內大專院校全職在學學生 (非研究生)，在職進修學生及教師不受理報名。學生設計競賽可跨院校混合組隊，每組最多 4 人。演講競賽則限以個人為單位參賽。
(學生設計競賽須有一人為 ASME 會員；演講競賽參賽者須為 ASME 會員)

柒、參賽方法：

參賽者可自行選擇欲報名參加之項目，並於國內賽之前完成作品或簡報，在國內賽當日前往比賽地點進行競賽。優勝隊伍或個人可獲得獎金以及 ASME 台灣分會所頒發的證書。

捌、競賽流程：

學生設計競賽：

競賽當天開放場地試用，正式開始前 30 分鐘停止試用比賽場地，以利主辦單位進行場地最後確認。當天會場備有準備區，參賽選手可以在準備區做最後的調整測試工作，並在開始前 10 分鐘收回各隊的遠端控制器，交回時請參賽者自行關閉電源，之後依序取回進行比賽，順序將以抽籤方式決定，詳細競賽流程將於當天宣布或以行前通知方式告知。

演講競賽：

競賽現場提供電腦與投影機，參賽者僅需自備內含簡報檔之隨身碟或光碟。

玖、評分標準：

由美國機械工程師學會台灣分會邀請學業界專家組成評審團，並按照美國機械工程師學會頒佈之評分標準進行評分。各項競賽的評分準則請見附錄。

注意：參加設計競賽之隊伍，須於進行任務前向評審委員說明相關設計理念及動力裝置等(約3分鐘)，再進行任務。

拾、競賽獎項與獎金：

獎項和獎金原則上依下方設定品項頒發，實際頒發獎項得因參賽隊伍數目和比賽成績狀況從缺。

一、學生設計競賽：

第一名：35,000 元

第二名：20,000 元

第三名：10,000 元

佳作：5,000 元(四名)

注意：第一名之隊伍之判定，評審委員有決定是否為從缺之最終決定權。

二、演講競賽：

第一名：10,000 元

第二名：5,000 元

拾壹、冠軍隊伍晉級競賽規定：

本次 ASME SPDC 競賽屬於國內賽，成績優勝隊伍可獲得獎金。由於 ASME 組織重整，區域行政層級已廢除，因此晉級方式會不同於往年先晉級亞太賽再晉級世界賽，確切競賽晉級方式請詳見 ASME 總部官方網站。

拾貳、報名辦法：

報名時間：即日起至 2020 年 2 月 25 日截止。

報名方式：網路報名，詳細報名方式，詳見附錄三

保證金：一隊 1000 元整，需準時報到，並全程參與活動，在頒獎結束後，退還全額保證金 1000 元。

拾參、聯絡資訊：

ASME 學生競賽 (SPDC) 國內賽 總召 黃鴻智

email: tony374895@gmail.com

ASME 學生競賽 (SPDC) 國內賽 副召 林君翰

email: hanks0602@gmail.com

如詢問規則相關問題請私訊粉絲專頁其他問題也可私訊粉絲專頁

「2020 ASME SPDC 台灣國內賽」

拾肆、競賽網站：

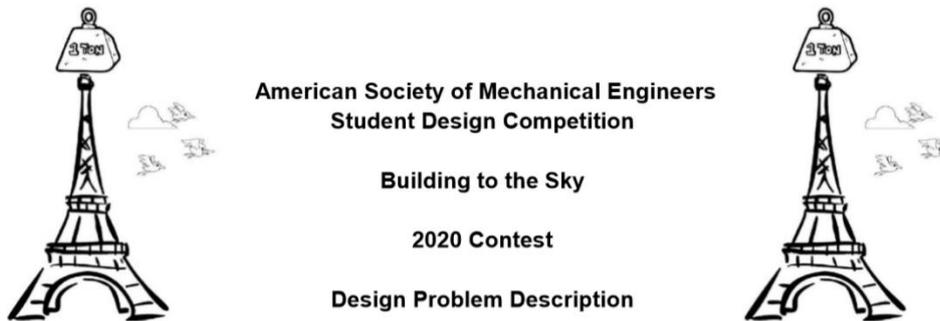
相關資訊會公布或修改在網站上，請密切注意。

ASME 官方網站網址：

[https://efests.asme.org/competitions/student-design-competition-\(sdc\)](https://efests.asme.org/competitions/student-design-competition-(sdc))

Facebook 搜尋：

2020 ASME SPDC 台灣國內賽



Manufacturing activities employ a significant percentage of engineers, they account for a large share of private research and development spending, and will continue to play an essential role in innovating our future. Necessary advances in technology will require both skilled engineers and novel manufacturing techniques.

This year's challenge requires teams to build a compact engineering system capable of manufacturing a tower made exclusively from standard-sized sheets of paper detailed in the rules below. The validation of your design will include testing for manufacturing speed, height of tower, and ability to support a load. The testing will occur at each of the ASME EFest Student Design Competitions taking place in 2020 – teams may only participate at one EFest.

Preliminary Rules: team eligibility, design constraints and general evaluation procedures:

1. Students participating in the competition must be undergraduate engineering students (any engineering discipline is allowed) and must be ASME student members. There is no limit on the number of students on a team or the number of teams from a school. Each student may only participate on one team (contribute to one device) – participants from schools fielding more than one team will be asked to affirm this at the competition.
2. Teams **must provide a rigid sizing box with a top** for the device and tools the team would use to make minor repairs during the competition. This box must be less than 50 cm x 50 cm x 50 cm (internal dimensions). Throughout the competition, the device and any tools, as well as all extra batteries, must fit completely and remain stored within the sizing box. *Do not show up at the competition without a legal sizing box and tools!*
3. The competition will take place over two days. Design modifications are allowed between Day 1 and Day 2, but devices must remain unaltered and within the sizing box between all rounds on each day.
4. To begin each round, devices will be taken from the sizing box and placed into a testing area marked by tape on the testing area floor. Devices must remain in contact with the floor at all times. Devices may only rest on the floor, and may not be secured to the floor.
5. All energy for the device must be provided by rechargeable batteries. Other forms of stored energy, such as pre-compressed springs or compressed gas, are not allowed.
6. Teams may replace batteries between any rounds, however replacement batteries must be rechargeable, and be stored in the sizing box throughout the competition.

Test Setup Rules: preparing for testing, operator/device operation

7. The testing area dimensions will be 2 meters x 2 meters, with boundaries marked by the inside edges of tape on the floor. Team devices will be brought to the testing area in the team sizing box.
8. Teams will have 1 minute to remove the device from the sizing box and prepare the device to perform each round of testing. Other than connecting power to the device and setting up to operate, no modifications are permitted during this setup time.
9. The testing area surface will be reasonably level and may be either smooth or non-smooth (e.g. hard surfaces, carpet, or other flooring typically found in public areas).
10. Devices must manufacture a single, self-supporting tower from multiple sheets of 20-lb, A4 or 8 ½ x 11 inch standard Letter-size paper. The paper must not be modified before manual loading, and the device *may only fold, cut or mechanically join individual sheets of paper -- no additional materials (solid or liquid) may be added to the sheet of paper before or after it has been loaded into your device.*
11. Teams are responsible for supplying all of their own paper, and may be asked by the judges to verify that the paper has not been modified. Paper does not have to fit in, or be stored in the team sizing box during the competition.
12. The paper tower may remain in contact with the device throughout each testing round.
13. No device component may exceed a 50 cm height from the floor **at any time** during testing. Only the paper tower will rise above this height limit.
14. Teams may not use more than 100 sheets of paper in any round of testing.
15. Only one team member will be allowed to manually load the paper, one sheet at a time, so that the device can connect it to the prior sheets of paper. Your device should have a control panel(s) to activate all connecting operations, which may be operated manually by a second team member, or by the paper loader.
16. The person loading paper may hold the sheet while the device is gaining control of the sheet, but must release the paper before it has been connected to prior sheets. Manually controlling a sheet as it is being fabricated into the tower will immediately end the round.
17. Teams are allowed more than one paper feeding system and location on their device, but paper feeding must be done one sheet at a time, by the designated paper loader. Teams are allowed more than one control switch, located anywhere on the device.
18. With the exception of loading each sheet of paper, interfering with the operation of the system after the sheet has been loaded, or touching the paper tower at any time during the testing will **immediately** end the round.
19. Each device testing run will last until a team member signals to the judges that they do not wish to add any more paper, or until the given event time has been reached.

Qualifying Testing Rules: initial rounds of performance measurement

20. During the first day of the competition, devices will be tested in each of the following three modes of operation
 - **Higher.** Build the tallest paper tower possible within 10 minutes.
 - **Faster.** Build a 1.5 m tower as quickly as possible. (5 minutes maximum)
 - **Stronger.** Build the strongest paper tower possible within 10 minutes
21. Multiple teams will operate their devices at the same time – this will expedite the competition. The number of simultaneously operating devices will be determined by the lead judge(s) at each EFest.
22. For the **Higher** testing rounds, all teams will be scored by their final tower height. Teams may stop building at any time they wish, but must stop at 10 minutes. Towers that collapse before they can be measured will be scored from the tallest height of paper in the collapsed structure. All teams will be ranked from 1st (tallest tower) to last (shortest tower) based on paper tower height measured from the floor.
23. For the **Faster** testing rounds, all teams will be scored by their time to build a tower to 1.5 meters above the floor. Teams that do not achieve this height will be scored on their final tower height at 5 minutes. Teams may stop building and signal this to the judges at any time they wish, but must stop at 5 minutes. Towers that collapse before they can be measured will be scored from the tallest height of paper in the collapsed structure. This height will be determined immediately after collapse. All teams achieving the 1.5 m height will be ranked based on fastest time to complete the tower, followed by the remaining teams who will then be ranked by tower height achieved in 5 minutes.
24. For the **Stronger** testing rounds, all teams will be scored based on the final tower height and the amount of weight that the team can support from the top of the completed tower. Teams may stop building at any time, but must stop at 10 minutes. Teams may apply any weight(s) **they bring** to the competition. Team scoring for the round will be determined by the final weight supported and the height of the location on the tower where the weight is supported (the lowest height if teams suspend multiple weights). Both will be measured by the judges after the 10 minute limit. Towers that collapse will be measured from the height of paper in the collapsed structure that is supporting the team weight(s). All teams will be ranked from 1st to last, based on:

$$\text{Stronger Score} = (\text{FinalWeightHeight} - 50 \text{ cm}) * (\text{FinalWeightAmount})$$

25. For the **Stronger** rounds, teams may provide any configuration of weights that they wish, and must manually suspend the weights from the top of the tower. The weight-loaded tower must be stable and remain untouched to allow final judging measurements. Weights may be added and removed any time during the building of the tower, but tower building must cease while weights are added or removed, and the tower may not be adjusted during this process.
26. The final team score for the Day 1 Qualifying will be the sum of the three places for the **Higher/ Faster/ Stronger** test rounds. The top performing teams (lowest total scores) will

advance to the Shoot-out Testing on Day 2 of the competition. Ties will be broken using the performance score from the **Stronger** test round – higher score wins.

Shoot-out Testing Rules: head-to-head, knockout rounds of performance measurement

- 27. The top 16 teams from Day 1 will compete in an elimination format on Day 2. The bracket is shown below.
- 28. Winning teams will advance and continue competing against each other until a winner is determined. A competition determining 3rd place will be held between the semi-final losers.
- 29. For all head-to-head rounds taking place on Day 2, teams will build a paper tower that can lift a 0.5 kg weight (provided by the judges) placed on a 10 cm diameter target disk at an elevation of 1.5 m above the floor. The first team to complete this is the winner of the match. Teams will have a maximum of 10 minutes to complete the task, if both teams are unable to lift the disk, the first team to touch the disk wins; if neither team reaches the disk the tallest tower wins the match.
- 30. Teams will be allowed to laterally move the target disk as their tower is being built so that the top of the tower is centered on the disk.



Day 2 Competition Bracket (with seeding based on Day 1 results)

Old Guard Oral Competition

What is here:

Section A = Description of the Competition

Section B = Information for Student Entries

Section C = Information for E-Fest Hosts and Judges

Section D = Prize Money available at E-Fest Venues

Section E = Prize Money available at IMECE the Final Competition

Section A = Description of the Competition

Like all professionals, engineers must possess a well-developed ability to synthesize issues and communicate effectively to diverse audiences. Among the highlights of the ASME Engineering Festivals® (or E-Fest) is the Old Guard Oral Presentation Competition. This competition is designed to emphasize the value of an ability to deliver clear, concise and effective oral presentations, particularly pertaining to some sphere in which an engineer is or should be involved. The Old Guard Committee offers significant prize money to competition winners.

Each student presentation lasts fifteen minutes and is followed by a five minute "Question and Answer" (Q&A) period. First Place finalists from each E-Fest event are invited to compete at the Society level competition at the International Mechanical Engineering Congress & Exposition (IMECE) held during November.

Note: While these rules primarily address the E-Fest, they may be utilized by any ASME group (Section, Student Section, Division, or EFX host) wishing to conduct an oral competition. Although the Old Guard will not provide prize monies nor invitations to IMECE for winners at these events, appropriate reference to the ASME Old Guard will be appreciated.

Section B = Information for Student Entries

ADVANCE Registration is required in order to guarantee a presentation slot during the E-Fest sessions. On-site registrations will be handled at the discretion of the host and Old Guard committee on "as-available" basis. Due to timing constraints and facility planning, advanced registration is highly encouraged.

B-1 Eligibility and Requirements

To be eligible to participate at an E-Fest Competition, each contestant must be a Student Member who:

- has not yet received an engineering degree* and,
- has been selected by his/her Student Section or ME Department to participate; and,
- is a Student Member in good standing.

* Student Members who complete the requirements for their baccalaureate engineering degree, or who actually receive that degree at the end of a term, semester, or quarter a short time before a scheduled E-Fest may still participate. These Student Members, however, must not have completed their degree requirements before December 1 of the calendar year prior to the E-Fest.

B-2 The Presentation

Each student presentation lasts fifteen minutes and is followed by a five minute "Question and Answer" (Q&A) period. Prize money is offered at each E-Fest and at the IMECE final competition as detailed in Sections D and E.

Each presentation in the Oral Presentation Competition must be delivered in English. The subject matter of each presentation must address a technical, economic or environmental aspect of engineering or other basic engineering theme, provided it pertains to some sphere in which an engineer is or should be involved. A major portion of a contestant's total score is based on the judges' evaluation of his/her relative capability to communicate orally, including evidence of a talent to respond effectively during the Q&A period.

A competitor may utilize any available resource but must realize that the presentation is to be an individual effort. Assistance in the use of visual aids is advisable (PowerPoint, models, etc.). Film clips, if used, may not exceed one-minute total duration (i.e. a maximum of one minute of each student presentation may be used for video). Film clips may not be accompanied by any recorded sound, although explanations may be provided by the presenter as the video is being played. Good practice and courtesy suggest credit be given during the presentation for any outside help related to the reported project. A written paper or manuscript is not required.

Students planning to compete are encouraged to review the JUDGING instructions detailed below in Section C – Information for E-Fest Hosts and Judges.

B-3 Competition Entry

ADVANCE Registration is required in order to guarantee a presentation slot during the E-Fest sessions. On-site registrations will be handled at the discretion of the Old Guard committee on an "as-available" basis. Due to timing constraints and facility planning, advanced registration is highly encouraged.

The Old Guard Oral Presentation Competitions are held at ASME E-Fests™. Students who wish to compete must:

1. Visit the E-Fest website: <https://efests.asme.org/>
2. Choose the location of the E-Fest he/she plans to attend.
3. Complete the appropriate registration form for that location.
4. At least two (2) weeks before the date of the E-Fest (or prior depending on posted registration dates), complete the Old Guard Oral Competition entry form and declare their presentation title.

Note: No more than 2 participants from a college/university can register to participate in the competition at any E-Fest venue.

Late entries are permitted on a local space available basis at the discretion of the E-Fest staff.

B-4 Conduct of the Contest

Each presentation in the Old Guard Competition shall be made by one contestant. Any questions regarding procedure shall be resolved by ASME staff or the Old Guard Committee before the E-Fest. The E-Fest host student lead(s) usually presides during the contest and ensures that there is adherence to the time schedule given in the printed program. The Presentation duration is fifteen (15) minutes plus five (5) minutes for Q&A immediately thereafter. Any time remaining or exceeding the fifteen minutes must be added to or subtracted from the five-minute Q&A discussion. A five-minute transition time between presentations is recommended.

No photographs may be taken during the presentation; photographs may be taken during the question and answer period.

Questions may be asked by any attendee of the competition except those from the competitor's own educational institution. Each person posing a question to a speaker must stand, identify himself/herself and school, and then proceed with the question. At the end of twelve minutes, the timekeeper will signal to the speaker that there are three minutes remaining.

At the end of fourteen minutes, the timekeeper will signal to the speaker that there is one-minute remaining.

At the end of fifteen minutes, timekeeper will signal for the speaker to conclude the presentation. The timekeeper will signal at the end of five minutes to terminate the discussion period. The speaker should promptly complete response to the current question and close their presentation.

B-5 Content

To what extent is the subject of interest to a technical audience? Is credit given for source of material or contribution by others? How much knowledge of subject was exhibited? Is work independent and original? Is the subject technical or general in nature?

B-6 Organization

Is there any novel approach to the subject? Is there sufficient background information provided in order to introduce the audience to the subject? Are the facts developed in logical and continuous sequence? Is there a definite conclusion, and was it adequately based on the facts or data presented?

B-7 Delivery and Effectiveness

Are the words distinctly pronounced with a speed appropriate for the cultural makeup of the audience and judges and was proper volume used to be heard by all? Is proper English used, and is the vocabulary sufficient? Is personal appearance appropriate? Are there any distracting mannerisms? Is the manner of delivery (conversation, memorized, read from manuscript) satisfactory? If visual aids are used, how effectively are they used? Is the presentation within the time limit of 15 minutes allowed?

B-8 Discussion

Is the presentation evoking spontaneous questions from the audience? Are the questions indicating the need for clarification of facts presented, or were they merely of the type seeking additional information? How readily and with what self-assurance did the speaker answer the questions? Are the answers indicating knowledge of the subject beyond that disclosed in the original presentation? Is the ability to think clearly demonstrated?

Section C = Information for E-Fest Hosts and Judges**C-1 Facility Requirements**

The host shall provide one or two rooms for conduct of the competition dependent on the number of Oral Competition entries registered. When sufficient presentation entries are estimated, host planners need to consider running up to TWO concurrent presentation sessions to assure that all entries can be scheduled. For up to 12 presentations total, a single competition session should be planned. Beyond 13 entries, two concurrent presentation sessions should be planned with entries split equal between tracks.

A maximum of 24 total Oral Presentations are allowed per E-Fest Venue. The host registration team shall close additional entries after reaching this limit.

C-2 Presentation Rooms

A work table shall be provided on one side of the room for the judging panel and timekeeper positioned to be able to clearly view the speaker, podium and projector screen.

C-3 Judging and Scoring Criteria

Each competition session is to be judged by the same Judging Team throughout, preferably three judges, but a minimum of two ASME members of mature judgment, who are selected along with one or two alternates. Local ASME Senior Sections may be requested to cooperate in the search for judges. Each E-Fest host shall select the judging team and timekeeper.

The Presentations will be judged in four categories; Content, Organization, Delivery and Effectiveness, and Discussion. See hotlink below for the Judging Sheet to be used.

Judges are to use the Scoring Sheet provided: ([Download Judging Sheet](#)) as the basis for judging all the E-Fests. The Scoring Sheet has been developed for the convenience of the judges in evaluating the presentation in competition. Scoring Sheet samples should be sent to the judges for familiarity ahead of the contest. Completed Scoring Sheets are not to be given to the presenters. Judges should be informed that they must agree to serve through the entire contest, be it one or two days.

Judges are encouraged to fill out the Feedback Sheet: ([Download Feedback Sheet](#)) on each student's presentation and give them to the contestants at the conclusion of the presentations. The Feedback Sheet has been developed for the convenience of the judge to assist him/her in this process.

Sufficient copies of the judging worksheets and feedback sheets shall be provided by the host at the beginning of each presentation session.

Highly recommended is a private judges briefing prior to the first presentation to assure that the team will score the presentations equally.

Section D = Prize Money available at E-Fest Venues

Judges at each E-Fest are to select First, Second and Third Place winners for each presentation session based on the criteria specified in the competition score sheet. An additional award is available for "Best Technical Content." This prize may be given to one of the top four winners or any other presenter at an E-Fest.

D-1 E-Fest Awards – Applicable for 2020

- First \$750.00 plus travel support to compete in the final competition at ASME's IMECE
- Second \$400.00

- Third \$200.00
- Technical \$100.00

D-3 Winner Announcement

Announcement of the winner placement is made at the E-Fest Awards/Closing Ceremony. Judges shall not release winner placement early. The winners are also recognized at Society events and featured in various ASME publications and web sites.

Section E = Prize Money available at IMECE the Final Competition

E-1 2020 ASME IMECE (ASME International Mechanical Engineering E-Fest & Exposition)

The FIRST place winner from each E-Fest Venue competition session are will be invited to participate in the IMECE finals of the Old Guard Oral Presentation Competition. The SECOND-place winners MAY be invited on a space available basis determined later by the Old Guard Committee.

Finals take place at the ASME International Mechanical Engineering Congress and Exposition (IMECE) in November. With the exception of the timekeeper's actions, the rules for the IMECE competition finals are the same as for the competition at the E-Fest.

E-2 Presentation Requirements

No substantial changes from the presentation given at the E-Fest may be made for the finals at IMECE. Any substantial change of title or major revision of the presentation given at the E-Fest will result in disqualification and may result in loss of travel reimbursement.

E-3 Judging

The final competition at IMECE is judged by a panel of three volunteers from within the ASME community, based on the same scoring worksheet criteria as the E-Fest events. The winners are also recognized at Society events and featured in various ASME publications and web sites.

E-4 Competition Finals at ASME IMECE in November 2020

Society Awards (Finals at IMECE)

- First \$2,000.00
- Second \$1,500.00
- Third \$1,000.00
- Fourth \$500.00 (only when at there are at least eight contestants)
- Innovation \$250.00

E-5 Travel support from the Old Guard

Travel expenses for attending the final competition will be covered using standard ASME travel reimbursement rules covered by Society Policy P-4.5. A copy of the travel reimbursement expense form may be downloaded from the ASME web site. Reimbursements are limited to a maximum of \$1000.00 for winners from any E-Fest held in North America (Canada, Mexico, or United States) and limited to a maximum of \$1500.00 (US\$) for winners from any E-Fest held outside of North America. The winner is responsible for any expenses above these maximum amounts.

Adopted by the Old Guard Committee
October 2019

附錄三

2020 年國研盃智慧機械競賽(ASME Taiwan SPDC)報名流程

1. 報名時間：即日起至 2020 年 2 月 25 日截止。
 - A. 填寫報名及基本資料表單
 - B. 填完表單後請掃描所有參賽人員，學生證正反面，並寄到 asmetwspdc@gmail.com 信箱中，主旨: "xxxx 隊伍 成員學生證"
 - C. 繳交保證金 1000 元，請至下列繳費系統填寫資料與繳款，
 - D. **2020 年國研盃智慧機械競賽 (ASME Taiwan SPDC) 報名訂金繳費系統**
 - E. 線上資料填寫完成後，請選擇「信用卡繳費」完成繳費程序，或「列印收費單」至全省超商門市（7-11、全家、OK、萊爾富）繳費；亦可利用自動提款機、網路銀行、網路 ATM 轉帳繳費（需自付手續費）。
 - F. 註：因超商繳費入帳時間需費時約 5-7 日，利用全省超商門市（7-11、全家、OK、萊爾富）繳費者，若有問題煩請一週後，再來電（賴小姐 (03-5779911 轉 656)）查詢，謝謝！
 - G. 保證金一隊 1000 元整，需準時報到，並全程參與活動，在頒獎結束後，退還全額保證金 1000 元。
 - H. 報名後約三到五天之間會傳簡訊至隊長手機確認報名，如果沒有收到訊息，請聯絡：
 - I. 總召：黃鴻智 grey468.me05@nctu.edu.tw
 - J. 副召：林君翰 hanks0602@gmail.com
2. 填寫報名及基本資料表單
3. 填完表單後請掃描所有參賽人員，學生證正反面，並寄到 asmetwspdc@gmail.com 信箱中，主旨: "xxxx 隊伍 成員學生證"
4. 報名後約三到五天之間會傳簡訊至隊長手機確認報名，如果沒有收到訊息，請聯絡
總召：黃鴻智 grey468.me05@nctu.edu.tw
副召：林君翰 hanks0602@gmail.com